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NOTES ON TWO CRABS SPECIES COLLECTED ON A CORALLIGENOUS BOTTOM OF THE IONIAN SEA

We report the presence of two species of Decapoda crabs, collected during a preliminary environmental survey carried out in the coastal area of Capo Rizzuto (Ionian Sea), designated as a possible site for a marine reserve (law 979/1982).

In April 1990, during a multidisciplinary cruise coordinated by ENEA CRAM (La Spezia), soft and hard bottoms were examined aiming to provide an overall characterization of the macrobenthic communities. Sampling methods, species inventory and main communities distribution will be reported by COCITO *et al.* (in prep.).

Both crab specimens were collected at the same station, at 45 m depth (Lat. 38°53'13"; Long. 17°06'37") (Fig. 1), by a modified Charcot dredge (see Fig. 2 in BIANCHI *et al.*, 1993), effective on hard and coralligenous substrata.

Species analysis allowed identification of a coralligenous community established on a sedimentary bed, merging offshore with a coastal terrigenous mud biocenosis (PÉRÈS & PICARD, 1964). The coralligenous biocenosis is mainly represented by encrusting calcareous algae, chiefly corallinaceae and peyssonneliaceae, arborescent algae (*Phyllopora*

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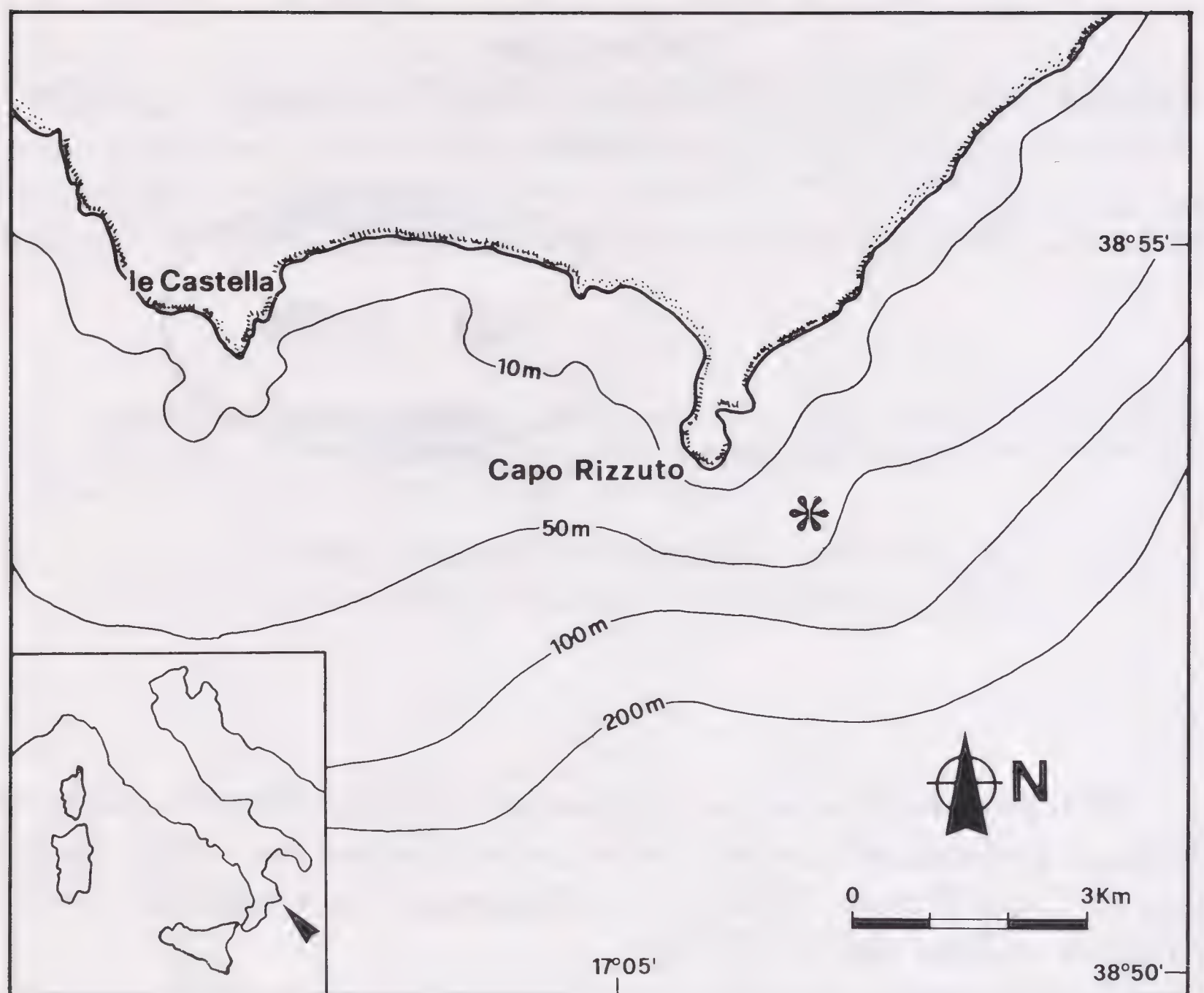


Fig. 1 The collecting area of *Liocarcinus maculatus* Risso and *Palicus caronii* P. Roux in the coastal area of Capo Rizzuto (Ionian Sea, Central Mediterranean).

nervosa, *Udotea petiolata*), ramified bryozoans (*Myriapora truncata*, *Smittina cervicornis*, *Pentapora fascialis*) and scleractinians (*Polycyathus muelleriae*). Blocks of organogenous concretions and fragments of dead bryozoan colonies are found in large quantities.

Ecological affinities of some species, such as the polychaete worm *Aphrodite aculeata*, the holoturian *Trachythyone tergestina* and the gastropod mollusc *Turritella communis*, indicate the presence of small sedimentary pockets inside the articulated topography of the biogenic formations. These structures are filled up with soft mud, probably coming from contiguous terrigenous sediments. Sometimes they collect organic matter: this fact could be suggested by the presence of the polychaete *Glycera rouxii*, even if one specimen was found.

The diversification of microbiotopes and the ecological

heterogeneity of coralligenous formations suggested to consider them as an 'eco-ethological cross-roads', rather than a simple biocenosis (LAUBIER, 1966); more recently PICARD (1985) described the same formations as a polybiocenotic species assemblage.

In the same coastal area of the Ionian Sea, Decapoda fauna has been subject of many studies (FOREST, 1967; PASTORE, 1972; 1975; 1977; 1981; 1983) and the majority of the species identified in this survey have been already described.

In this paper we described some morphological features of a mature female of *Liocarcinus maculatus* and we recorded for the first time the presence of *Palicus caronii* in the Ionian Sea.

***Liocarcinus maculatus* (Risso, 1827)**

Material collected - One mature female of 15 mm carapace length (CL), and 16.5 mm carapace width (CW).

Remarks - The characteristics of this specimen are in accordance with the original description of *L. maculatus*. It was previously known as *Liocarcinus pusillus* (Leach, 1816). Recently FROGLIA & MANNING (1982) showed that the Mediterranean form is a distinct species from the Atlantic *L. pusillus*, and that it should be known as *L. maculatus*. It was already recorded from this area as *L. pusillus* by FOREST (1967).

The morphology of the little portunid collected by us, however, showed some particular features (Fig. 2). The teeth of the frontal region and of the lateral carapace are more marked than in specimens collected on sand and muddy-sand, as well as the carapace surface being more granulate and frontal regions more evident. The general colour of the body is brick red with white bands on pereopods; after several months of preservation in 5% neutralized formol saline the specimen still retains its original colour. The dactylus of 5th pereopods are slightly more enlarged than in specimens of sand and muddy-sand. Probably it is a case of ecomorphosis.

Moreover, this specimen showed another peculiarity. It was in the postmoulting stage (stage B *sensu* HIATT, 1948) and its vulvae were

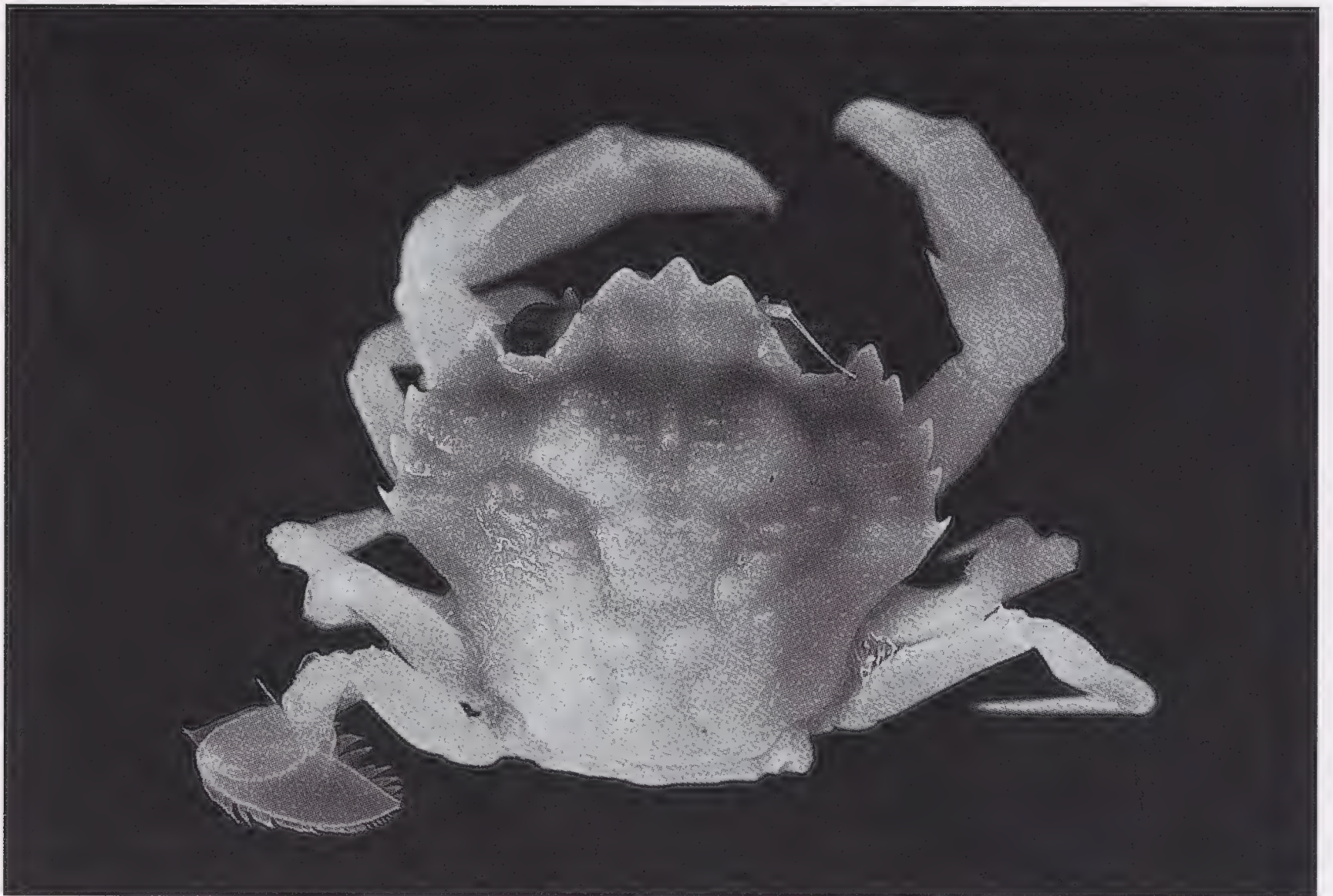


Fig. 2 *Liocarcinus maculatus* Risso of a coralligenous bottom of Capo Rizzuto (Ionian Sea), dorsal view.

open without any presence of sperm plugs. In the portunids, to which this species belongs, the mating occurs with the soft body of the female. The male searches the female when she is in premoulting stage; there is a long procedure of premating and postmating, that ends when the body of the female becomes hard. In these females, at the end of mating, a sperm plug may be seen to protrude from the vulvae (HARTNOLL, 1969). The absence of sperm plugs in the vulvae indicates that no mating took place. This species have been recorded from sublittoral habitats at depths of between 5 and 95 m, on sand, sandy mud, muddy sand, and mud with eel grass (FALCIAI, 1981; FROGLIA & MANNING, 1982; MORI data unpublished). So, the natural habitat of this species seems to be represented by soft bottoms, and for this reason, this one crab found on a coralligenous bottom, may be an isolated virgin specimen. The largest female recorded in literature measured 11.2 mm carapace length (HOLTHUIS & GOTTLIEB, 1958; ZARIQUIEY ALVAREZ, 1968; FROGLIA & MANNING, 1982; MORI data unpubl.). Present specimen seems to be the biggest so far collected.

Ovigerous females have been observed from February to September (FROGLIA & MANNING, 1982; GARCIA RASO, 1984; MORI *et al.*, 1994).

Its presence appears to be restricted to the Mediterranean Sea (FROGLIA & MANNING, 1982) where it has been reported throughout the area (ZARIQUIEY ALVAREZ, 1968; MONCHARMONT, 1980; FALCIAI, 1981; 1988; MANNING & STEVCIC, 1982; GARCIA RASO, 1984; LEWINSOHN & HOLTHUIS, 1986).

***Palicus caronii* (P. Roux, 1830)**

Material collected - One adult female of 12 mm Cl and 14 mm CW.

Remarks - The characteristics of this specimen are in accordance with the description of *P. caronii* given by ZARIQUIEY ALVAREZ (1968).

In the Mediterranean Sea, ovigerous females have been collected from May to September (ZARIQUIEY ALVAREZ, 1968; LEWINSOHN & HOLTHUIS, 1986; MORI data unpublished).

This species is found throughout the Mediterranean and in the eastern Atlantic (ZARIQUIEY ALVAREZ, 1968; MONCHARMONT, 1979; MANNING & HOLTHUIS, 1981; TEMPLADO *et al.*, 1985; GARCIA RASO, 1984, 1985; LEWINSOHN & HOLTHUIS, 1986). This is the first time that the species has been reported in the Ionian Sea.

It has been recorded on coralligenous bottoms mainly characterized by corallinaceae (MONCHARMONT, 1979; MORI data unpublished), in the biocenosis of semi-dark grottoes with the exclusive species of *Corallium rubrum* (TEMPLADO *et al.*, 1985; GARCIA RASO, 1984), and on sand, algae and shell (GARCIA RASO, 1985), at depths of between 23 to 100 m.

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SUMMARY

The presence of *Palicus caronii* (P. Roux) in the Ionian sea is reported, and some particular body features of a mature females of *Liocarcinus maculatus* (Risso) are described.

RIASSUNTO

Viene segnalata per la prima volta la presenza di *Palicus caronii* (P. Roux) nel Mar Ionio, e vengono descritti alcuni particolari caratteri morfologici del corpo di una femmina di *Liocarcinus maculatus* (Risso).